What is claimed is :

1. Process for the production of a component consisting of a fiber reinforced material, wherein liquid resin is supplied to a semifinished fiber article by way of application by vacuum pressure, characterized in that a heat curing resin is used as resin and that application by vacuum pressure and temperature are controlled such that in relation to the liquid resin the boiling point curve of the resin is not exceeded.

2. Process as defined in claim 1, characterized in that the application by vacuum pressure is controlled via a vacuum pump during the resin infiltration.

3. Process as defined in claim 1 or 2, characterized in that vacuum pressure is applied to a distribution fabric serving to supply resin to the semifinished fiber article.

4. Process as defined in any one of the preceding claims, characterized in that the pressure following the resin infiltration is measured at a distribution fabric serving to supply resin to the semifinished fiber article.

5. Process as defined in claim 4, characterized in that one or several pressure sensors are brought into operative

connection with the distribution fabric following the resin infiltration of the workpiece.

6. Process as defined in claim 5, characterized in that the operative connection is interrupted prior to and during the resin infiltration of the workpiece.

7. Process as defined in any one of the preceding claims, characterized in that the semifinished fiber article is placed in a mold during the resin infiltration.

8. Process as defined in claim 7, characterized in that the temperature of the mold is controlled.

9. Process as defined in any one of the preceding claims, characterized in that a plurality of temperature sensors are arranged at a vacuum foil.

10. Process as defined in any one of the preceding claims, characterized in that the temperature is adjusted with respect to the temperature dependence of the viscosity of the resin.

11. Process as defined in claim 10, characterized in that a resin infiltration takes place in an injection phase at a certain temperature or in a certain range of temperatures, the resin thereby having such a viscosity that an essentially uniform resin front is formable.

12. Process as defined in claim 10 or 11, characterized in that the temperature is adjusted such that the viscosity of the resin is in the range between 10 mPas and 1000

mPas.

13. Process as defined in any one of the preceding claims, characterized in that a reduction in the application by vacuum pressure is brought about in a curing phase following an injection phase.

14. Process as defined in claim 13, characterized in that an increase in temperature is brought about in the curing phase following the injection phase.

15. Process as defined in any one of the preceding claims, characterized in that the temperature is increased in a curing phase, the resin being completely cured during said phase.

16. Process as defined in claim 15, characterized in that the temperature is increased in relation to an injection phase.

17. Process as defined in claim 15 or 16, characterized in that the temperature is increased in relation to a curing phase following an injection phase.

18. Process as defined in any one of the preceding claims, characterized in that the temperature is adjusted such that a certain processing period or a certain processing period range is specified for the resin.

19. Process as defined in claim 18, characterized in that the temperature is adjusted such that the processing time of

the resin is adapted to a workpiece size.

20. Process as defined in any one of the preceding claims, characterized in that a process monitoring with respect to resin infiltration and resin curing is carried out.

21. Process as defined in any one of the preceding claims, characterized in that the resin is pre-aged prior to the infiltration to increase the viscosity.

22. Process as defined in any one of the preceding claims, characterized in that a resin trap is provided for making a uniform application by vacuum pressure possible after the resin infiltration and essentially preventing any removal of the resin by suction during a curing phase of the resin.

23. Process as defined in claim 22, characterized in that the resin trap comprises an extraction guide means having such a large internal diameter that air and gas bubbles are able to rise without resin being pressed into an extraction chamber.

24. Process as defined in claim 23, characterized in that the extraction chamber is formed in a storage vessel for resin for the resin injection.

25. Process as defined in any one of the preceding claims, characterized in that a distribution fabric serving as a flow aid for the supply of resin to the semifinished fiber article is no longer operative after a certain

distance in relation to a workpiece edge.

26. Process as defined in claim 25, characterized in that the distance is in the range of between 10 mm to 50 mm.

27. Process as defined in claim 25 or 26, characterized in that the distribution fabric ends before the given distance.

28. Process as defined in claim 25 or 26, characterized in that a cover film is provided between workpiece and distribution film for limiting the effectiveness of the distribution fabric.

29. Process as defined in any one of the preceding claims, characterized in that the distribution fabric serving as a flow aid during the supply of resin is cut in relation to a workpiece edge in order to control the angular course of the flow front of the resin.

30. Process as defined in claim 29, characterized in that an edge end is sealed.

31. Process as defined in any one of the preceding claims, characterized in that one or several vacuum ports are provided, vacuum pressure being applied to the workpiece via said port or ports and said port or ports being connected to one or several vacuum pumps.

32. Process as defined in claim 31, characterized in that one vacuum port is arranged in an area last reached by a flow

front of the injected resin.

33. Process as defined in claim 31 or 32, characterized in that one vacuum port is designed as a resin trap able to accommodate a certain amount of resin in order to prevent resin passing into a vacuum system.

34. Process as defined in claim 32, characterized in that the vacuum port is connected via distribution fabric to an underside of the semifinished fiber article.

35. Process as defined in any one of claims 31 to 34, characterized in that a connection of the vacuum port to a vacuum foil is sealed.

36. Process as defined in claim 34 or 35, characterized in that the distribution fabric is sealed in relation to a workpiece edge.

37. Process as defined in claim 36, characterized in that a film is arranged between distribution fabric and seal.

38. Process as defined in any one of claims 31 to 37, characterized in that the vacuum port is sealed in relation to the workpiece.

39. Process as defined in any one of the preceding claims, characterized in that a resin brake is arranged at a workpiece edge.

40. Process as defined in claim 39, characterized in that a first connection for the application by vacuum pressure

is arranged in front of a resin brake in relation to the semifinished fiber article and a second connection is arranged behind a resin brake.

41. Process as defined in any one of the preceding claims, characterized in that a process monitoring is carried out by means of ultrasound acting on the workpiece.

42. Process as defined in any one of the preceding claims, characterized in that a polyaddition resin is used as heat curing resin.

43. Process as defined in any one of the preceding claims, characterized in that the resin supply speed of resin from a resin store to the semifinished fiber article is controllable.

44. Apparatus for carrying out the process as defined in any one of the preceding claims, comprising at least one vacuum port (30; 46a, 46b, 48a, 48b) for applying vacuum pressure to a workpiece, characterized in that the vacuum port is designed as a resin trap able to accommodate a certain amount of resin in order to prevent resin from passing into a vacuum system (24, 28) connected to the vacuum port.

45. Apparatus as defined in claim 44, characterized in that the vacuum port (30) is connected to a vacuum pump (24).

46. Apparatus as defined in claim 45, characterized in that an operative connection of the vacuum port (30) with the vacuum pump (24) is adapted to be interrupted in a

controllable manner.

47. Apparatus as defined in any one of claims 44 to 46, characterized in that the vacuum port (30) is positionable on a distribution fabric (44; 84), resin being suppliable to the semifinished fiber article (12) by means of said fabric.

48. Apparatus as defined in claim 47, characterized in that the distribution fabric (84), on which the vacuum port (30) is positioned, is arranged beneath the semifinished fiber article (12) in relation to a supply direction of the resin.

49. Apparatus as defined in claim 47 or 48, characterized in that the vacuum port (30) has a contact flange (32) for the positioning on the distribution fabric (44).

50. Apparatus as defined in any one of claims 44 to 49, characterized in that the vacuum port (30) comprises a chamber (36) for accommodating resin.

51. Apparatus as defined in any one of claims 44 to 50, characterized in that the vacuum port (30) is positionable at or within a distance to an edge (42) of a workpiece last reached by a flow front of the injected resin.

52. Apparatus as defined in any one of claims 44 to 51, characterized in that a storage vessel (70) for the supply of resin is adapted to be used as resin trap.

53. Assembly for the production of a component consisting of a fiber reinforced material by means of resin impregnation of a semifinished fiber article (12), comprising

- a mold (10);

- a vacuum foil (38) for producing a vacuum chamber (78), the semifinished fiber article (12) being positionable on the mold (10) in said vacuum chamber, wherein vacuum pressure is appliable to the vacuum chamber (78) and

- a device (70, 76) for supplying liquid resin to the semifinished fiber article (12),

characterized in that application by vacuum pressure and temperature are controllable during the resin impregnation such that in relation to the liquid resin the boiling point curve is not exceeded.

54. Assembly as defined in claim 53, characterized in that the resin is a heat curing resin.

55. Assembly as defined in claim 53 or 54, characterized in that a distribution fabric (44) is arranged between semifinished fiber article (12) and vacuum foil (38) as a flow aid for the resin.